<u>Amendments to the Title</u>:

Please replace the title of the present application, oath or declaration excepted, with the following amended title:

Method <u>and</u> [[,]] Equipment ~~and System for Signaling in a Network Including Ethernet~~ <u>for Providing a Signaling Channel for Performing Signaling Functions at an Ethernet Level</u>

Amendments to the Specification

Please amend the specification as set forth below, wherein the numbered paragraphs refer to the numbering in the published specification of this application, taking into consideration the amendments made to the Specification in the response of July 26, 2006.

Please amend the Abstract as follows:

~~There is proposed a~~ A method is disclosed for ~~of~~ providing a signaling channel for performing one or more signaling functions at the Ethernet level ~~of Ethernet~~. The telecommunication of interest is organized by information packets forming an information flow, and the method comprises utilizing a combined flow composed of the information flow and one or more service flows formed from service packets being ~~compatible~~ multiplexable with the information packets at the Ethernet level. The service packets belonging to a particular service flow carry an indication of a ~~corresponding one of the~~ signaling function[[s]] to be performed, while the one or more service flows form the signaling channel at the Ethernet level ~~of Ethernet~~.

Please amend paragraph 9 as follows:

There is a long felt need to measure and analyze packets of Ethernet, Internet, and some other packet networks when they are transmitted within a lower level frame, for example, when enveloped in an SDH/SONET frame. It has been realized by the Inventors [[,]] that, for various purposes, such measurement and analysis is essential. For example, for proper billing of an

Ethernet subscriber transferring packets via an SDH transport network, a management system has to know how many Ethernet packets passed during a particular period of time, how many frames of those passed satisfy requirements of quality, etc. It should be emphasized that any maintenance monitoring performed [[on]] at the SDH level does not help to answer these questions. Such maintenance monitoring [[It]] means[[,]] that at the receiving end, where the Ethernet information is recovered from the SDH frames, no statistical information will be available on functioning of the Ethernet domain.

Please amend paragraph 20 as follows:

The step of introducing the service packets into the information flow is preferably performed by multiplexing, and the step of extracting [[--]] by demultiplexing. The service packets are considered compatible with the information packets if they are equal sized or just suitable for multiplexing with one another.

Please amend paragraph 21 as follows:

It should be noted that a span of the network domain between the two operating points may include one or more monitoring points. The basic two operating points comprise a source adaptation element and a sink adaptation element respectively. The monitoring point differs from a sink adaptation element by the fact that it enables analyzing the service flow but does not terminate it. On the other hand, the monitoring operation may be provided also on a sink adaptation element, using its service flow(s). Therefore, the signaling channel will be maintained

between any two points, whether they are an operating point or a monitoring point. The monitoring points may coincide with said (basic) operating points, though [[it]]this is not obligatory.

Please amend paragraph 25 as follows:

According to another, and preferred, embodiment, the mentioned span of the network domain may comprise a segment (segments) of a transport or wide area network, for example a network such as SONET or SDH. They may alternate, and may not, with segment(s) of the Ethernet packet network. In this case, the signaling channel at the level of the packet network will be preserved also during the information transfer via the transport network, and will be thus available at any selected monitoring or operating point.

Please amend paragraph 34 as follows:

performance monitoring functions including at least one Tandem Connection (TC) function[[;]],

Please amend paragraph 35 as follows:

one way and round trip delay measurement function[[;]],

Please amend paragraph 41 as follows:

All these functions can be performed by introducing various types of the service packets forming the above-mentioned so-called service flows and ~~suppose utilizing~~ may utilize specific processing programs at the operating points.

Please amend paragraph 43 as follows:

By providing the above described procedure, any two Ethernet entities (modules, devices, nodes, cards) will be able to communicate at the Ethernet level either directly or through any transport network, ~~with~~ performing signaling functions which have not been available before.

Please amend paragraph 51 as follows:

Similarly, there is provided a sink adaptation element capable of terminating a signaling channel for performing one or more signaling functions at the level of Ethernet[[, the]]. The sink adaptation element is capable of:

Please amend paragraph 53 as follows:

separating from said combined flow the one or more service flows and analyzing ~~thereof~~ the one or more service flows to perform said signaling functions respectively assigned to said service flows.

Please amend paragraph 65 as follows:

FIG. 5 schematically illustrates a structure of ~~the~~ a data field of a particular type of ~~the~~ service packet[[s]].

Please amend paragraph 67 as follows:

So in sections 10, communication is performed at the Ethernet layer, while between the blocks 14[[--]] <u>communication is performed</u> at the transport layer. Further, the adaptation blocks are characterized in that they participate in creating and processing a combined communication flow in the Ethernet traffic. This will be described in more details with reference to the following drawings.

Please amend paragraph 68 as follows:

FIG. 2 schematically illustrates a path 20 between two user terminal points 21 and 23 belonging to either one and the same, or two different, Ethernet networks. In this example, the path comprises two operating points 22 and 24, wherein the operating point 22 is a source performing source functions, and point 24[[--]]is a sink performing sink functions of the path. Owing to that, the path acquires a signaling channel (marked with a dashed line 28) which carries a so-called signaling flow that is combined with the Ethernet information flow between the points 22 and 24. In the drawing, one path traffic segment is marked 26, which is defined by two points (usually, nodes) 32 and 30 lying on the total path 20. This segment may indicate, for example, a transport network portion via which Ethernet packets are to be transferred. The points 30 and 32 can be so-called monitoring points i.e., these locations may serve for analysis of the signaling channel 28 and/or of the traffic between the operating points 22 and 24. In case there is a transport network section between 32 and 30, the monitoring points can be provided with adaptation equipment for mapping and de-mapping. The monitoring points do not have to be provided with source/sink

functions. In another embodiment, when the points 30 and 32 are equipped to provide such functions, an additional signaling channel can be created there-between (line 34), and/or between the points 32-22 and points 30-24, 22-30, 32-24 (line 36 is shown as an example). As can be seen, more than one signaling channel may be arranged in the path.

Please amend paragraph 69 as follows:

FIG. 3 illustrates which operations are performed at an adaptation block marked 14 in FIG. 1 for achieving the purpose of the present invention. The adaptation block 14 is an assembly comprising a source element 13 and a sink element 15. The adaptation block includes two pairs of input-output contacts. One pair comprises an input 40 connected to an Ethernet device 42 (it may be a terminal device, but may be not) for receiving its information flow, and a corresponding output 41 is connected to a transport network 46. The other pair consists of an input 44 receiving a combined data and signaling flow from the transport network 46, and an output 43 connected to the Ethernet. In this drawing, the output 43 is directly connected to the device 42. In the ingress direction, the ~~ethernet~~ Ethernet packets are received by the source element 13 from the device 42 and are monitored by a monitor 48 for various parameters of the information flow. Based on results of the monitoring, and based on specifically stated rules pre-programmed in an operating unit 50, the source element may initiate one or more so-called Ethernet Connection Signaling Functions. (Block 50 is therefore called ECSF block). More particularly, the operating block 50 performs a source function i.e., generates a series of Ethernet flows of service packets, each flow for a specific signaling function. Each of these flows has a distinct identifier which is carried inside the service packet thus turning it into a specific packet

type.

Please amend paragraph 71 as follows:

The information flow of the Ethernet device combined and the service packets (created by the block 50 in the form of one or more service flows) are then multiplexed by a multiplexer 54 to create a combined information and [[&]]signaling flow via an intermediate connector 56. In this particular embodiment of the source element, block 58 performs mapping of the combined flow into transport frames of the transport layer, and transmits it to the transport network 46 via the output 41 which can be connected to an optical fiber.

Please amend paragraph 72 as follows:

In the opposite direction, another Ethernet device (not shown) transmits its signal to the transport network 46, its signal being ~~which is~~ processed in the manner as described above. The obtained transport flow from the network 46 arrives to the input 44 of the adaptation block 14, undergoes a de-mapping procedure at a block 60 of the sink element 15 and then, after the received combined information and [[&]] signaling Ethernet packet flow is extracted from the transport network frames, it is demultiplexed by a demultiplexer 62. Thus, the signaling information added in the form of service packets by an Ethernet source block at the opposite side (not shown), is terminated at an operating block 64 ECSF which analyzes the received signaling channel and discards the service flow(s) thereupon. Block 64, inter alia, performs an Ethernet Tandem Connection Sink Function. The information flow, separated from the service (signaling) flow, is

transmitted to the Ethernet device 42 via the output 43 of the adaptation block 14.

Please amend paragraph 101 as follows:

Number of service flow frames correctly received; [[.]]

Please amend paragraph 102 as follows:

Number of service flow frames received with errors; [[.]]

Please amend paragraph 103 as follows:

Number of information frames received in each group size (group sizes are defined by the system management of a system);[[.]]

Please amend paragraph 105 as follows:

Every parameter to be counted, from those listed above, will have its own counter in the signaling frame. Preferably, PM signaling frames are generated periodically, and the period time can be programmable. Every frame will contain counter values for every parameter. ~~It~~ These counter values may be located in the data field.

Please amend paragraph 109 as follows:

The [[N]] number of erroneous frames [[are]] is counted at the ingress point of the segment by the source function, and the count is forwarded to the egress point of the segment (sink function) through a TCPM signaling frame. The sink function of the TCPM compares the count of the ingress point with a count obtained for the egress point to calculate the errors which have

occurred in the segment.

Please amend paragraph 116 as follows:

The process of forming and analyzing frames of the FELS signaling flow comprises a number of steps. The source function of a far end node forms the FELS frame every 10 ~~miliseconds~~ milliseconds and sends it ~~periodicaly~~ periodically to the near end sink element, carrying the far end status information. The sink function at the near end receives and identifies the frame as a FELS signaling frame, decodes the far end link status field, and if the status differs from the "link up" status (000A Hex), the near end transmitter stops transmitting to the far end. As a result, the far end will enable/disable transmission of data from the near end.